Exercise   1 *Let's discuss some of the properties of the tangent function.*

(a) *Recall that the sine function is odd and the cosine function is even. Using the fact that* $\tan(x) = \dfrac{\sin(x)}{\cos(x)}$, *we can deduce that tangent is*

   Multiple Choice:

   (i) *odd.* ✓
   (ii) *even.*
   (iii) *neither odd nor even.*

(b) *Recall that the tangent function has period* π. *Using the fact that* $\tan\left(-\dfrac{\pi}{3}\right) = -\sqrt{3}$, *answer the following questions.*

   What is $\tan\left(\dfrac{2\pi}{3}\right)$?

   Multiple Choice:

   (i) $\sqrt{3}$
   (ii) $-\sqrt{3}$ ✓
   (iii) 3
   (iv) -3
   (v) -1.72

   What is $\tan\left(\dfrac{\pi}{3}\right)$?

   Multiple Choice:

   (i) $\sqrt{3}$ ✓
   (ii) $-\sqrt{3}$
   (iii) 3
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   (v) -1.72

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